



MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS

2017/2018 ACADEMIC YEAR

SCHOOL OF SCIENCE AND INFORMATION SCIENCES

**FOURTH YEAR SEMESTER II EXAMINATIONS FOR THE
BACHELOR OF SCIENCE IN INFORMATION SCIENCE**

COURSE CODE: INS 461

COURSE TITLE: DISTRIBUTED SYSTEMS

DATE: 24TH APRIL, 2018

TIME: 1100 – 1300HRS

INSTRUCTIONS TO CANDIDATES

ANSWER Question ONE and any other TWO

QUESTION ONE (30 MARKS)

- a) Define the following terms in relations to distributed systems
- i. Port
 - ii. Marshal
 - iii. Client
 - iv. Socket
 - v. Service
- [5 marks]**
- b) A key characteristic in the design of distributed systems is the concept of independent computers performing a single task. Quantify this key aspect of design. **[12 marks]**
- c) A distributed system is a collection of independent computers that appear to its users as a single coherent system. With this notion, explain why organizations would choose to use, and why would systems be distributed. **[9 marks]**
- d) Briefly discuss four characteristics that can be used to assess a distributed system. **[4 marks]**

QUESTION TWO (20 MARKS)

- a) Discuss the implications or significant consequences of having a distributed. **[9 marks]**
- b) Discuss all the steps necessary in preparing a process for user datagram packet sockets to accept requests from clients. **[11 marks]**

QUESTION THREE (20 MARKS)

- a) Write a program to initialize client communication process through a socket of transmission control protocol. **[12 marks]**
- b) Describe the term 'distributed' system and state at least three examples of distributed systems. Explain how each of your examples achieves distribution. **[8 marks]**

QUESTION FOUR (20 MARKS)

- a) While explaining your code, write a transmission control protocol pseudo code to wait and correspond to requests from a client. **[8 marks]**
- b) Remote procedure call is an application-programming interface that offers a means for generating distributed applications in computing. Discuss. **[12 Marks]**

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